DelfiScan M80

Quick Reference Guide

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Disclaimer

Delfi has taken reasonable measures to provide information in this manual that is complete and accurate, however, Delfi reserves the right to change any specification at any time without prior notice.

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UPDATES AND LANGUAGE AVAILABILITY

UK/US

The latest drivers and documentation updates for this product are available on Internet.
Go to: www.delfi.com

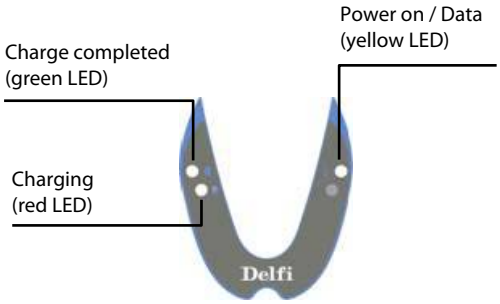
USING DELFISCAN M80 READER AND CRADLE

The DelfiScan M80 reader and cradle build a Cordless Reading System for the collection, decoding and transmission of barcoded data.

Standard models can be connected to a Host PC through a USB, RS-232, Wedge or Pen emulation cable. All models are suited for single-cradle layouts.

The LEDs signal the DelfiScan M80 cradle status, as described in the following table:

	LED	BEEPER	STATUS
	Power on / Data	-	Yellow On = DelfiScan M80 cradle is powered. Yellow Blinking = the cradle receives data and commands from the Host or the reader.
	Charging	-	Red On = the battery charge is in progress.
	Charge completed	-	Green On = the battery is completely charged.
	Alternating red/green	Repetitive beep	Charging out of temperature range, over-current or over-voltage conditions

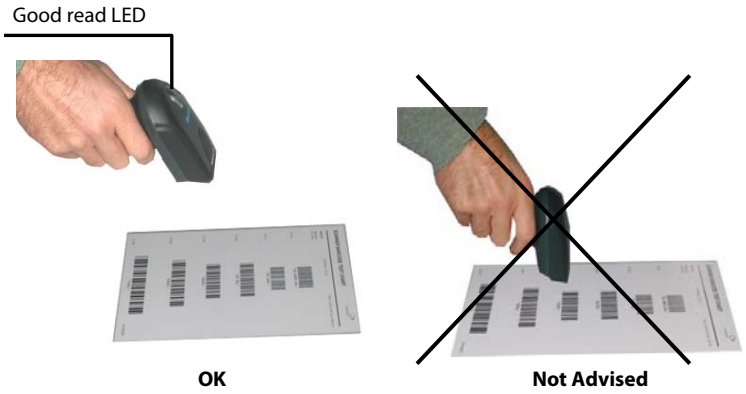


READING ANGLE

DelfiScan M80 readers automatically scan barcodes **at a distance**. Simply aim and pull the trigger. Code scanning is performed along the center of the light bar emitted from the reading window. This bar must cover the entire code.

Successful scanning is obtained by tilting the reader with respect to the barcode to avoid direct reflections, which could impair the reading performance. See the figures below.

Successful reading is obtained by an audible tone.



HANDS-FREE USE

When using the DelfiScan M80 on the cradle, remember to lock the reader by pushing up the locking system as indicated in the following figure.

USING YOUR DELFISCAN M80 READING SYSTEM

Follow the procedure below to start using your DelfiScan M80 reading system:

1. Connect a DelfiScan M80 cradle to the Host. For installation and connection information see page 5.
2. Insert the DelfiScan M80 reader into the cradle to start the battery charging. A full charge of the Lithium battery takes 3.5 – 6 hours.

NOTE *To achieve the best battery life, it is recommended to perform a full battery charge before using the reader **in hand-held mode**.*

In hands-free use, you can immediately start using the *reader*, since it is powered by the cradle.

3. Configure the DelfiScan M80 reader.
4. Configure the DelfiScan M80 cradle. See DelfiScan M80 cradle configuration on page 7.

CHANGING THE BATTERIES

To change the battery of your reader, you must:

1. Unscrew the battery cover screw (Figure 1)
2. Unplug the white connector and remove the old battery (Figure 2)
3. Insert the new battery and plug in the white connector

NOTE *When inserting the new battery into the handle pay attention to position the battery and the connector just as shown in Figure 3.*

Figure 1

Figure 2

Figure 3

4. Insert the cover in the handle and screw it back into place.

Figure 4

WARNING

Do not incinerate, disassemble, short terminals or expose to high temperature. Risk of fire, explosion. Use specified charger only. Risk of explosion if the battery is replaced by an incorrect type. Dispose of the batteries as required by the relevant laws in force.

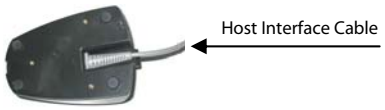
SYSTEM CONNECTIONS

CAUTION

Connections should always be made with power off!

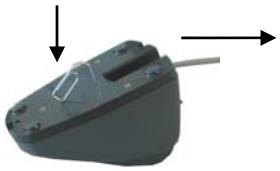
You can connect the DelfiScan M80 cradle to the Host through the dedicated connector, using the cable corresponding to the desired interface type.

1. Connect the appropriate interface cable to the cradle by simply plugging it into the Host connector on the base of the cradle.



DelfiScan M80 Cradle - Bottom View

To disconnect the cable, insert a paper clip or other similar object into the hole corresponding to the connector on the base of the cradle. Push down on the clip while unplugging the cable. Refer to the following figure:



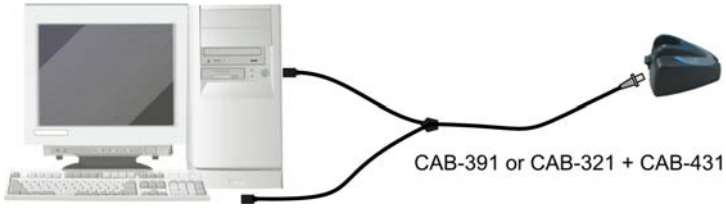
Disconnecting the Cable

RS-232

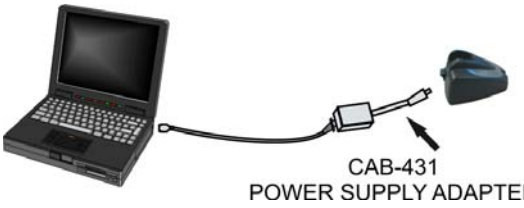
USB

IBM USB POS

WEDGE



WEDGE



PEN

DELFISCAN M80 CRADLE CONFIGURATION

The DelfiScan M80 cradle configuration can be performed in two ways: either by sending configuration strings from the Host via the RS-232 or USB-COM interface or by reading configuration barcodes with the reader.

Serial/USB-COM Configuration

By connecting the DelfiScan M80 cradle to a PC through an RS-232 or USB cable (only USB-COM interface) it is possible to send configuration strings from the PC to the reader. Using this method you can also send new configuration strings from the PC to the reader or upgrade application software onto the reader.

DELFISCAN M80 READER CONFIGURATION

When the DelfiScan M80 cradle is connected and powered, configure the DelfiScan M80 reader by reading the following codes in the given sequence and follow the instructions.

Note: for the numeric code selection of step 3, use the table at the end of this Quick Reference Guide.

1. Restore DelfiScan M80 default

2. Enter configuration

3. Set Radio Address

+

four digits for the DelfiScan M80 Address
(from 0000 to 1999).

All readers used in the same area must have different addresses.

4. Exit and Save configuration

5. Read the **Bind** code to pair the DelfiScan M80 reader to the cradle.

The reader is dedicated to the cradle. Any previously **bound** reader will be excluded.

Bind

The green LED on the DelfiScan M80 reader will blink: the reader is ready to be positioned onto the cradle.

6. Firmly position the reader onto the cradle within 10 seconds, a beep will be emitted, signaling that the DelfiScan M80 cradle has been paired to the DelfiScan M80 reader.

YOUR READER IS NOW READY TO READ CODES.

7. Now you can configure the DelfiScan M80 cradle by reading configuration barcodes.

INTERFACE SELECTION

Follow the procedure to configure the interface required by your application.

Multi-standard interface models:

- USB Interface
- RS-232 Interface
- Wedge Interface
- Pen Interface

USB INTERFACE CONFIGURATION

The USB interface is compatible with:

- Windows 98 (and later)
- Mac SO 8.0 (and later)
- 4690 Operating System

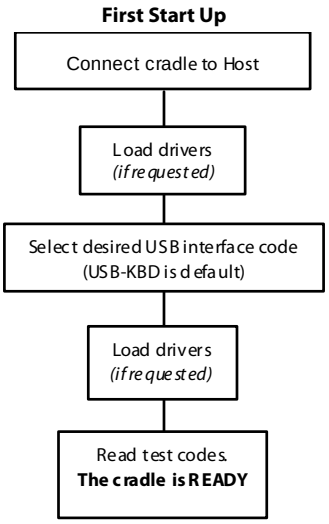
START-UP

As with all USB devices, upon connection, the Host performs several checks by communicating with the cradle. Before the cradle is ready, the correct USB driver must be loaded.

For all systems, the correct USB driver for the default USB-KBD interface is included in the Host Operating System and will either be loaded automatically or will be suggested by the O.S. and should therefore be selected from the dialog box (the first time only).

You can now read codes with the associated DelfiScan M80 reader. At this point you can read the USB interface configuration code according to your application. Load drivers from the O.S. (if requested). When configuring the USB-COM interface, the relevant files and drivers must be installed from the USB Device Installation software which can be downloaded from the web site: http://www.delfi.com.

The cradle is ready.



Successive start-ups will automatically recognize the previously loaded drivers.

USB INTERFACE SELECTION

USB-KBD (default)

USB-KBD-ALT-MODE

USB-KBD-APPLE

USB-COM*

USB-IBM-Table Top

USB-IBM-Hand Held

* When configuring USB-COM, the relevant files and drivers must be installed from the USB Device Installation software, which can be downloaded from the web site http://www.delfi.com.

Select one keyboard nationality code from the table at page 15.

RS-232 INTERFACE SELECTION

Read the DelfiScan M80 cradle restore default code, and then read the interface selection code for your application:

RESTORE DELFISCAN M80 CRADLE DEFAULT

RS-232 INTERFACE

Standard

POS TERMINALS

Nixdorf Mode A

Fujitsu

ICL Mode

WEDGE INTERFACE SELECTION

Read the DelfiScan M80 cradle restore default code, then read the interface selection code for your application:

RESTORE DELFISCAN M80 CRADLE DEFAULT

WEDGE INTERFACE

IBM AT or PS/2 PCs

IBM XT

PC Notebook

IBM SURE1

IBM Terminal 3153

WEDGE INTERFACE (CONTINUED)

IBM Terminals 31xx, 32xx, 34xx, 37xx:

To select the interface for these IBM Terminals, read the correct KEY TRANSMISSION code. Select the KEYBOARD TYPE if necessary (default = advanced keyboard).

KEY TRANSMISSION MODE

make-only keyboard

make-break keyboard

KEYBOARD TYPE

advanced keyboard

typewriter keyboard

ALT MODE

The following interface selection allows barcodes sent to the PC to be interpreted correctly independently from the Keyboard Nationality used. **You do not need to make a Keyboard Nationality selection.**

(default = Num Lock Unchanged)

Make sure the Num Lock key on your keyboard is ON.

IBM AT - ALT mode

PC Notebook - ALT mode

WEDGE INTERFACE (CONTINUED)

WYSE TERMINALS

ANSI Keyboard

PC Keyboard

ASCII Keyboard

VT220 style Keyboard

DIGITAL TERMINALS

VT2xx/VT3xx/VT4xx

APPLE

APPLE ADB Bus

USB / WEDGE KEYBOARD NATIONALITY

USB/Wedge interface users should select one of the following KEYBOARD NATIONALITY codes.

Belge

Deutsch

English (UK)

Español

Français

Italiano

Svenskt

USA

The following Keyboard Nationality selection is only valid for IBM AT compatible PCs:

Japanese

PEN INTERFACE SELECTION

Read the DelfiScan M80 cradle restore default code, then read the interface selection code for your application:

RESTORE DELFISCAN M80 CRADLE DEFAULT

PEN INTERFACE

OPERATING TEST

Read the TEST codes below.

EAN-8

EAN-13

Code 39 (Normal)

Code 128

Interleaved 2 of 5

YOUR SYSTEM IS READY TO READ CODES AND TO SEND THE DATA TO THE HOST.

To change the defaults, refer to the "DelfiScan M80 Reference Manual" or to the Aladdin™ Configuration program, both downloadable from our website www.delfi.com.

READER DEFAULT CONFIGURATION

DATA FORMAT
Code identifier disabled (enabled for POS terminals), field adjustment disabled, code length tx not transmitted, character replacement disabled, address stamping disabled; address delimiter disabled

POWER SAVE
Sleep state/USB suspend disabled, enter sleep timeout = 0.6 sec

READING PARAMETERS
Hand-held operation = hardware trigger, stand operation = automatic, trigger active level, no timeout, Flash On = 1 sec, Flash Off = 0.6 sec, one read per cycle, safety time 0.5 sec, beeper intensity high, tone 2, beeper type monotone, beeper length short, good read spot duration medium, automatic operation aiming light enabled

DECODING PARAMETERS
Ink spread enabled, overflow control enabled, interdigit control enabled, Puzzle Solver™ disabled, decoding safety = one read

CODE SELECTION

Enabled codes

- EAN 8/EAN 13 / UPC A/UPC E without ADD ON
  check digit transmitted, no conversions
- Interleaved 2/5
  check digit control and transmission, variable length code; 4-99 characters
- Standard Code 39
  no check digit control, variable length code; 1-99 characters
- Code 128
  variable length code; 1-99 characters
- EAN 128, ISBT128, Code 93, Codabar, pharmaceutical codes, MSI, Plessey, Telepen, Delta IBM, Code 11, Code 16K, Code 49, GS1 DataBar™ (GS1 DataBar™ includes the following symbologies: RSS-14, RSS-14 Stacked, RSS Expanded and RSS Limited).

ADVANCED FORMATTING PARAMETERS
Concatenation disabled, no advanced formats defined

RADIO PARAMETERS
Radio protocol timeout = 2 seconds, power-off timeout = 4 hours, single store disabled, beeper control for radio response = normal

CRADLE DEFAULT CONFIGURATION

USB DEFAULT SETTINGS
DATA FORMAT: code identifier disabled, code length not transmitted, character replacement disabled, address stamping disabled, address delimiter disabled.

USB KEYBOARD: USA keyboard, FIFO enabled, inter-character and inter-code delays disabled.

USB COM: handshaking disabled, delay disabled, rx timeout 5 sec., ack/nack disabled, FIFO enabled, serial trigger lock disabled.

Default Headers and Terminators for each USB mode:

- USB-KBD: no header, terminator = ENTER
- USB-KBD-ALT-MODE: no header, terminator = CR
- USB-COM: no header, terminator = CR-LF
- USB-IBM-TABLE TOP: not applicable
- USB-IBM-HAND HELD: not applicable

RS-232 Standard DEFAULT SETTINGS
9600 baud, no parity, 8 data bits, 1 stop bit, handshaking disabled, ACK/NACK disabled, FIFO enabled, inter-character delay disabled, 5 sec. rx timeout, serial trigger lock disabled.

DATA FORMAT: code identifier disabled, code length not transmitted, no header, terminator = CR-LF, character replacement disabled, address stamping disabled, address delimiter disabled.

RS-232 Nixdorf DEFAULT SETTINGS
9600 baud, odd parity, 8 data bits, 1 stop bit, handshaking hardware (RTS/CTS), ACK/NACK disabled, FIFO disabled, inter-character delay disabled, 9.9 sec. rx timeout, serial trigger lock disabled.

DATA FORMAT: code identifier enabled, code length not transmitted, no header, terminator = CR, character replacement disabled, address stamping disabled, address delimiter disabled.

RS-232 Fujitsu DEFAULT SETTINGS
9600 baud, no parity, 8 data bits, 1 stop bit, handshaking disabled, ACK/NACK disabled, FIFO enabled, inter-character delay disabled, 2 sec. rx timeout, serial trigger lock disabled.

DATA FORMAT: code identifier enabled, code length not transmitted, no header, terminator = CR, character replacement disabled, address stamping disabled, address delimiter disabled.

RS-232 ICL DEFAULT SETTINGS
9600 baud, even parity, 8 data bits, 1 stop bit, handshaking RTS always on, ACK/NACK disabled, FIFO enabled, inter-character delay disabled, 9.9 sec. rx timeout, serial trigger lock disabled.

DATA FORMAT: code identifier enabled, code length not transmitted, no header, terminator = CR, character replacement disabled, address stamping disabled, address delimiter disabled.

WEDGE DEFAULT SETTINGS
USA keyboard, caps lock off, caps lock auto-recognition enabled; num lock unchanged, inter-character and inter-code delay disabled.

DATA FORMAT: code identifier disabled, code length not transmitted, no header, terminator = ENTER, character replacement disabled, address stamping disabled, address delimiter disabled.

PEN DEFAULT SETTINGS
Interpret operating mode, minimum output pulse 600 µs, conversion to Code 39, overflow medium, output level normal, idle level normal, inter-block delay disabled.

TECHNICAL FEATURES

DelfiScan M80 Reader and Cradle

Electrical Features - READER	
Battery Type	1 Lithium battery 700 mAh
Time of recharge Lithium	max 6 hours with USB cable
Operating autonomy	typical 20000 reads
Indicators	LED, Beeper
Max scan rate	235 scans/sec
Electrical Features - CRADLE	
Supply voltage	5 VDC ± 5%
Power consumption	max. 4 W (charging)
LED Indicators	Battery charging **red** Charge completed **green** Power / Data **yellow**
Optical Features	
Sensor	CCD solid state (2088 pixels)
Illuminator Wavelength Max. LED Output Power	LED array 630 ~ 670 nm 0.33 mW
LED safety class	Class 1 EN 60825-1
Reading field	see reading diagram
Max. resolution	0.10 mm, 4 mils
PCS minimum	20% (Test Chart)

Environmental Features – READER	
Working Temperature	0°to + 40 °C (32° to 104 °F)
Storage Temperature (without battery)	-20° to 70 °C (-4° to 158 °F)
Humidity	90% non condensing
Drop resistance	IEC 68-2-32 Test ED 1.5 m (4 ft 9 in)
Protection class	IP30
Environmental Features - CRADLE	
Working temperature	0° to 40 °C (32° to 104 °F)
Storage temperature	-20° to 70 °C (-4° to 158 °F)
Humidity	90 % non condensing
Protection class	IP30
Mechanical Features – READER	
Weight (without batteries)	about 189 g (6.66 oz)
Dimensions	171 x 90 x 68 mm (6.72 x 3.54 x 2.80 in)
Material	Cycoloy C 2800 with desmopan 3855
Mechanical Features – CRADLE	
Weight	181 gr (6.38 oz)
Dimensions	80 x 130 x 90 mm (3.15 x 5.11 x 3.54 in)
Material	Cycoloy C 2800 with desmopan 3855

DelfiScan M80 Radio Features

Radio Features	European Models	USA Models
Radio Frequency	433.92 MHz	910 MHz
Bit rate	19200 baud	36800 baud
Effective Radiated Power	<10 mW	<1 mW
Range (in open air)	12 m	12 m
RF Modulation	FSK	

WARRANTY

Delfi warranties this product against defects in workmanship and materials, for a period of 36 months from the date of shipment, provided that the product is operated under normal and proper conditions.

Delfi has the faculty to repair or replace the product; these provisions do not prolong the original warranty term. The warranty does not apply to any product that has been subject to misuse, accidental damage, unauthorized repair or tampering.

PATENTS

This product is licensed under the U.S. Patent 6,158,661

This product is covered by one or more of the following patents:
U.S. patents 5,992,740; 6,305,606 B1; 6,517,003 B2; 6,631,846 B2; 6,712,271 B2; 6,817,525 B2; 6,834,806 B2; and 6,871,785 B2
European patents 789,315 B1; 851,378 B1; 895,175 B1; 962,880 B1; 1,164,536 B1; 1,205,871 B1; and 1,205,873 B1

Additional patents pending.

SERVICES AND SUPPORT

Delfi provides several services as well as technical support. Go to **www.delfi.com** and find further information including:

- **PRODUCTS**
  Search through the product catalogue where you can find further information about a specific product and download datasheets.
- **SUPPORT**
  - **Download –** Download manuals, driver and/or software to a specific product.
  - **Support –** Contact our support technicians and start online support.
- **CONTACT US**
  Send an e-mail to a specific department or contact Delfi by phone.

COMPLIANCE

This device must be opened by qualified personnel only.
The batteries must be removed before opening the device.

POWER SUPPLY

This device is intended to be supplied by a UL Listed/CSA Certified Power Unit marked "Class 2" or LPS power source rated 5 V, minimum 0.8 A and having a cable length <3 m.

FCC COMPLIANCE

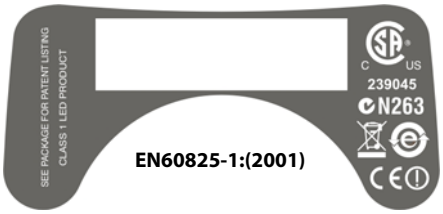
Modifications or changes to this equipment without the expressed written approval of Delfi could void the authority to use the equipment.

This device complies with PART 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference which may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

LED CLASS



DelfiScan M80 Product Label

Class 1 LED product.

RADIO COMPLIANCE

Contact the competent authority responsible for the management of radio frequency devices of your country to verify the eventual necessity of a user license.
Refer to the web site http://europa.eu.int/comm/enterprise/rtte/spectr.htm for further information.

WEEE COMPLIANCE

Waste Electrical and Electronic Equipment (WEEE) Statement

English
For information about the disposal of Waste Electrical and Electronic Equipment (WEEE), please refer to the website at www.delfi.com.

Italian
Per informazioni sullo smaltimento delle apparecchiature elettriche ed elettroniche consultare il sito Web www.delfi.com.

French
Pour toute information relative à l'élimination des déchets électroniques (WEEE), veuillez consulter le site Internet www.delfi.com.

German
Informationen zur Entsorgung von Elektro- und Elektronik- Altgeräten (WEEE) erhalten Sie auf der Webseite www.delfi.com.

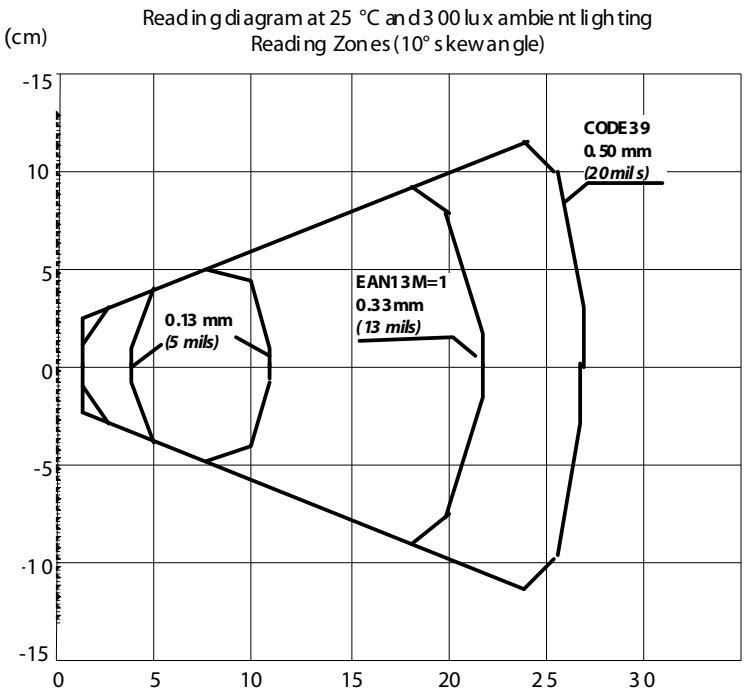
Spanish
Si desea información acerca de los procedimientos para el desecho de los residuos del equipo eléctrico y electrónico (WEEE), visite la página Web www.delfi.com.

Portuguese
Para informações sobre a disposição de Sucatagem de Equipamentos Eléctricos e Eletrônicos (WEEE - Waste Electrical and Electronic Equipment), consultar o site web www.delfi.com.

Chinese
有关处理废弃电气电子设备 (WEEE)的信息，请参考Delfi公司的网站：www.delfi.com.

Japanese
廃電気電子機器(ＷＥＥＥ)の処理についての関連事項はDelfiのサイトwww.delfi.com., をご参照下さい。

READING DIAGRAM



NUMERIC TABLE

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Delfi Technologies A/S
Galoche Alle 1
DK-4600 Køge
Denmark

CE 07

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declares that the
déclare que le
bescheinigt, daß das Gerät
declare que el

DelfiScan M80; Cordless System

e tutti i suoi modelli
and all its models
et tous ses modèles
und seine Modelle
y todos sus modelos

sono conformi alla Direttiva del Consiglio Europeo sottoelencata:
are in conformity with the requirements of the European Council Directive listed below:
sont conformes aux spécifications de la Directive de l'Union Européenne ci-dessous:
den nachstehenden angeführten Direktive des Europäischen Rats entsprechen:
cumple con los requisitos de la Directiva del Consejo Europeo, según la lista siguiente:

1999/5/EEC R&TTE

Questa dichiarazione è basata sulla conformità dei prodotti alle norme seguenti:
This declaration is based upon compliance of the products to the following standards:
Cette déclaration repose sur la conformité des produits aux normes suivantes:
Diese Erklärung basiert darauf, daß das Produkt den folgenden Normen entspricht:
Esta declaración se basa en el cumplimiento de los productos con las siguientes normas:

ETSI EN 301 489-3 V1.4.1, AUGUST 2002 :	*ELECTROMAGNETIC COMPATIBILITY AND RADIO SPECTRUM MATTERS (ERM); ELECTROMAGNETIC COMPATIBILITY (EMC) STANDARD FOR RADIO EQUIPMENT AND SERVICES; PART 3: SPECIFIC CONDITIONS FOR SHORT-RANGE DEVICES (SRD) OPERATING ON FREQUENCIES BETWEEN 9KHZ AND 40GHZ*
ETSI EN 300 220-3 V1.1.1, SEPTEMBER 2000 :	*ELECTROMAGNETIC COMPATIBILITY AND RADIO SPECTRUM MATTERS (ERM); SHORT RANGE DEVICES (SRD); RADIO EQUIPMENT TO BE USED IN THE 25MHZ TO 1000MHZ FREQUENCY RANGE WITH POWER LEVELS RANGING UP TO 500MW; PART 3: HARMONIZED EN COVERING ESSENTIAL REQUIREMENTS UNDER ARTICLE 3.2 OF THE R&TTE DIRECTIVE*
EN 60950-1, DECEMBER 2001 :	*INFORMATION TECHNOLOGY EQUIPMENT - SAFETY - PART 1 : GENERAL REQUIREMENTS*

March 1st, 2007